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Serial Number: 10/564,297   Dkt: 2167.052US1
Filing Date: January 10, 2006
Title: METHOD AND DEVICE FOR GENERATING AND DETECTING A FINGERPRINT FUNCTIONING AS A TRIGGER MARKER IN
    A MULTIMEDIA SIGNAL

IN THE CLAIMS

The following listing of the claims will replace all prior listings of claims in the application. Inserted text is underlined, and deleted text is either struck through or shown in double enclosing brackets. Applicants aver that no new matter has been added and that all claimed elements are supported by Applicants' specification as originally filed.

1. (Currently Amended)   A ~~method of relating one or more trigger actions with a multimedia signal, the~~ method comprising:

     providing ~~at least one~~ <u>a</u> trigger time point (T_n; T_{n+1}) <u>of a plurality of trigger time points</u> <u>within a multimedia signal, the trigger time point (T_n; T_{n+1}) corresponding to a</u> <u>segment of a plurality of segments of the multimedia signal;</u> ~~and for each trigger~~ ~~time point (T_n; T_{n+1})~~

     providing ~~at least one~~ <u>a</u> representation of ~~least one~~ <u>an</u> ~~associated trigger~~ action <u>that</u> <u>corresponds to the trigger time point (T_n; T_{n+1})</u>, where [[each]] <u>the</u> trigger time point (T_n; T_{n+1}) indicates a time point [[of the]] <u>within the</u> multimedia signal [[for]] <u>at</u> which the ~~at least one associated trigger~~ action is to be ~~available~~ <u>triggered</u> during <u>a</u> playback of the multimedia signal,

     ~~for each given trigger time point (T_n; T_{n+1})~~ deriving a fingerprint <u>based</u> on the ~~basis of a~~ segment of the multimedia signal, ~~where the segment of the multimedia signal is~~ ~~associated with the given trigger time point (T_n; T_{n+1})~~, and

     associating the derived fingerprint with the ~~at least one associated trigger~~ action.

2. (Currently Amended)   The method according to claim 1, further comprising:

     ~~for each obtained trigger time point (T_n; T_{n+1}),~~ storing <u>at least one of</u> the derived fingerprint [[and]] <u>or</u> the ~~at least one~~ representation of the ~~at least one associated~~ ~~trigger~~ action in a first database.

3. (Currently Amended)   The method according to claim 1, ~~wherein the one or more derived fingerprints and/or the at least one representation of at least one associated trigger action for the multimedia signal is transmitted to a playback-device via the Internet or in a side-channel of a broadcast channel or via some other channel or means.~~ further comprising

transmitting at least one of the derived fingerprint or the representation of the action to a

playback device.

4. (Currently Amended)   The method according to claim 1, wherein ~~the segment of the multimedia signal is associated with the given trigger time point (T~~$_n$~~; T~~$_{n+1}$~~) according to:~~

~~the segment of the multimedia signal starting or ending at a predetermined distance~~

~~before or after the given trigger time point (T~~$_n$~~; T~~$_{n+1}$~~), or~~

~~the given trigger time point (T~~$_n$~~; T~~$_{n+1}$~~) being at a predetermined time point between a start~~

~~and an end of the segment of the multimedia signal.~~

the trigger time point (T_n; T_{n+1}) corresponds to at least one of a start of the segment, an

end of the segment, a predetermined distance from the start of the segment, or a

predetermined distance from the end of the segment.

5. (Withdrawn)   A method of detecting one or more trigger actions in a multimedia signal
(101), the method comprising the steps of:

- generating a fingerprint stream (104) on the basis of the multimedia signal (101),

- comparing a segment of the fingerprint stream (104) with one or more fingerprints (102)

stored in a second database (203 ') in order to determine if a match exists or not

between the segment and a fingerprint (102) in the second database (203 '), the

second database (203') further comprising for each stored fingerprint (102) at least

one representation of at least one associated action (105), and

- if a match exists retrieving the at least one representation of the at least one associated

action (105) associated with the matching fingerprint (102).

6. (Withdrawn)   A method according to claim 5, characterized in that said method further comprises the step of: executing the at least one associated action (105) associated with the matching fingerprint (102) at an appropriate trigger time point (T_n; T_{n+1}).

7. (Withdrawn)   A method according to claim 6, characterized in that the appropriate trigger time point (T_n; T_{n+1}) is given by an unambiguously relation with a segment of a multimedia signal (101) used during generation of the matching fingerprint (102).

8. (Currently Amended)   The method according to claim 1, wherein [[said]] the multimedia signal is at least one of an audio signal[[,]] or a video signal or a combined audio/video signal.

9. (Currently Amended)   The method according to claim 1, wherein [[said]] the at least one associated trigger action is selected from [[the]] a group consisting of:
        retrieving and displaying additional information on a display,
        retrieving and playing additional information via a speaker,
        playing another multimedia signal instead of [[said]] the multimedia signal for a
                predetermined or variable period of time,
        interrupting the playback stopping or pausing playing of [[said]] the multimedia signal,
        executing [[other]] control commands, and
        preparing [[the]] a system for user inputs.

10. (Currently Amended)   The method according to claim 2, wherein further comprising
        storing at least one of the derived fingerprint or the representation of the action and/or the
                fingerprint is stored in a second database; and wherein the derived fingerprint is at
                least one of an audio fingerprint or a [[and/or]] video fingerprint.

11. (Currently Amended) A ~~multimedia device for relating one or more trigger actions with a multimedia signal, the~~ device comprising:

> a microprocessor-controlled fingerprint module configured to provide ~~means for providing at least one~~ a trigger time point (T_n; T_{n+1}) of a plurality of trigger time points within a multimedia signal, the trigger time point (T_n; T_{n+1}) corresponding to a segment of a plurality of segments of the multimedia signal, and for ~~each trigger time point (T_n; T_{n+1})~~ providing ~~at least one~~ a representation of ~~least one~~ an ~~associated trigger~~ action that corresponds to the trigger time point (T_n; T_{n+1}), where [[each]] the trigger time point (T_n; T_{n+1}) indicates a time point [[of the]] within the multimedia signal [[for]] at which the ~~at least one associated trigger~~ action is to be ~~available~~ triggered during a playback of the multimedia signal,
>
> the microprocessor-controlled fingerprint module ~~a fingerprint generator adapted to, for each given trigger time point (T_n; T_{n+1}), deriving~~ being further configured to derive a fingerprint based on the ~~basis of a~~ segment of the multimedia signal, ~~where the segment of the multimedia signal is associated with the given trigger time point (T_n; T_{n+1}),~~ and
>
> a microprocessor-controlled database module configured to associate ~~means for associating~~ the derived fingerprint with the ~~at least one associated trigger~~ action.

12. (Currently Amended) The device according to claim 11, further comprising:

> a first database ~~having stored~~ to store at least one of the derived fingerprint [[and]] or the ~~at least one~~ representation of the ~~at least one associated trigger~~ action ~~for each obtained trigger time point (T_n; T_{n+1})~~.

13. (Currently Amended) The device according to claim 11, further comprising:

> a transmitter ~~for transmitting~~ to transmit at least one of the ~~one or more~~ derived fingerprint or the ~~fingerprints and/or the at least one~~ representation of ~~at least one~~ the ~~associated trigger~~ action ~~for the multimedia signal~~ to a playback-device ~~via the Internet or in a side-channel of a broadcast channel or via some other channel or means.~~

14. (Currently Amended)   The device according to claim 11, wherein ~~the segment of the multimedia signal is associated with the given trigger time point (T_n; T_{n+1}) according to:~~

~~the segment of the multimedia signal starting or ending at a predetermined distance before or after the given trigger time point (T_n; T_{n+1}), or~~

~~the given trigger time point (T_n; T_{n+1}) being at a predetermined time point between a start and an end of the segment of the multimedia signal.~~

the trigger time point (T_n; T_{n+1}) corresponds to at least one of a start of the segment, an end of the segment, a predetermined distance from the start of the segment, or a predetermined distance from the end of the segment.

15. (Withdrawn)   A audio and/or video playback device (300) for detecting one or more trigger actions in a multimedia signal (101) comprising:

- means (302) for generating a fingerprint stream (104) on the basis of the multimedia signal (101),

- means (302) for comparing a segment of the fingerprint stream (104) with one or more fingerprints (102) stored in a second database (203 ') in order to determine if a match exists or not between the segment and a fingerprint (102) in the second database (203'), the second database (203 ') further comprising for each stored fingerprint (102) at least one representation of at least one associated action (105), and

- means (302) for, if a match exists, retrieving the at least one representation of the at least one associated action (105) associated with the matching fingerprint (102).

16. (Withdrawn)   A evice according to claim 15, characterized in that said device further comprises: means (303) for executing the at least one associated action (105) associated with the matching fingerprint (102) at an appropriate trigger time point (T_n; T_{n+1}).

17. (Withdrawn)　　　A device according to claim 16, characterized in that the appropriate trigger time point (T_n; T_{n+1}) is given by an unambiguously relation with a segment of a multimedia signal (101) used during generation of the matching fingerprint (102).

18. (Currently Amended)　　　The device according to claim 11, wherein [[said]] the multimedia signal is at least one of an audio signal[[,]] or a video signal or a combined audio/video signal.

19. (Currently Amended)　　　The device according to claim 11, wherein [[said]] the at least one associated trigger action is selected from [[the]] a group consisting of:

　　　retrieving and displaying additional information on a display,

　　　retrieving and playing additional information via a speaker,

　　　playing another multimedia signal instead of [[said]] the multimedia signal for a

　　　　　predetermined or variable period of time,

　　　interrupting the playback stopping or pausing playing of [[said]] the multimedia signal,

　　　executing [[other]] control commands, and

　　　preparing the system device for user inputs.

20. (Currently Amended)　　　The device according to claim 12, further comprising wherein the derived fingerprint and/or the fingerprint is stored in a second database to store at least one of the derived fingerprint or the representation of the action; and wherein the derived fingerprint is at least one of an audio fingerprint or a [[and/or]] video fingerprint.

21. (Currently Amended)　　　A non-transitory computer readable storage medium having stored thereon instructions for causing one or more processing units processors to execute the method according to claim 1.